

Funding Program Biomass for energy



BioEnergieDat

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Provision of an up-to-date, harmonized and consistent LCI database as a contribution to the development of a strategy for providing sustainable bioenergy in Germany

Objective:

- Development of valid and consistent process chains on energy from biomass under German conditions
- Extension of existing data base to cover innovative technologies
- Provision of a web-based IT infrastructure for a flexible, modular use and updating of the database (Open Source IT concept)
- Allocation of project overarching methodological developments and evaluation procedures

	rape	sun flower	potatoes	crop	sugar beet	fodder beet	corn (whole plant)	grass	miscanthus	energy wood	straw	logging remains	cattle manure	pig manure	landscape conservation wood	industrial wood residues	sewage sludge	waste wood (A-I-III)	used edible fat
PME	X	X																	
Vegetable oil	X	X																	X
Bio-EDH			X	X	X	X													
Bio-ETBE			X																
BTL								X	X	X									
Pellet 15kW											X	X	X	X			X		
Heating plant 5 MW											X	X	X	X			X		
Biogas 250 kW			X	X	X	X	X					X	X	X			X		
ORC								X	X	X		X	X	X					
CHP (gasification)								X	X	X		X	X	X					
Steam turbine 5 MW								X	X	X		X	X	X					
Steam turbine 20 MW								X	X	X		X	X	X				X	

Tab.1: Selected technologies

Work package 1 – Data

- Validated and harmonized data sets for process chains
- Provision of unit process data sets
 - process chains remain fully transparent
 - quality assurance and future up-dating on the level of each unit process are easily done

Three step procedure for data generation:

1. Comprehensive evaluation of literature
 - "technology fact sheet"
2. Consistent framework for nomenclature, structure and content of data sets
3. Data set generation in openLCA and upload to the database

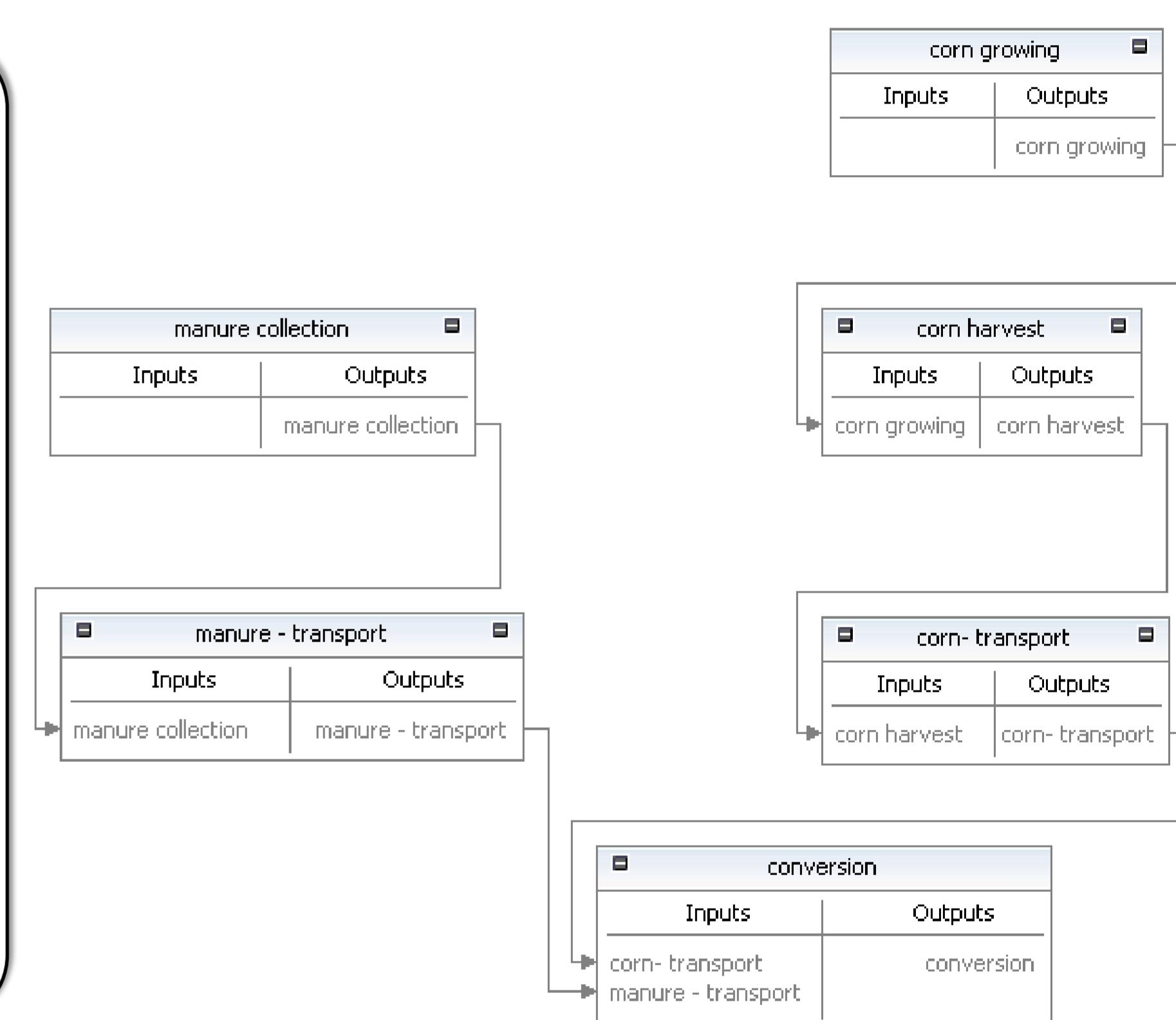


Fig.1: Process chains for biogas production from corn and manure (in openLCA)

Work package 2 – IT

- Open Source based IT infrastructure: **Open Source LCA** modeling tool "openLCA", central database and web-based Content Management System (CMS)
- Service interface between database system and modeling tool (using the principles of RESTful web services)
 - data access through portlets (Java based portal server) or via openLCA
- Data transfer in ILCD (International Reference Life Cycle Data) or in EcoSpold format

Work package 3 – Scenarios

- Development of learning curves to generate data sets for future periods (2020 and 2030)
- Evaluation of existing scenarios to extrapolate the future quantity structures of the investigated technologies

Work package 4 – Methodology

- Overarching methodology for the accounting of process chains and development of a procedure for quality assurance
- Analysis of user needs and methodology requirements in the context of bioenergy, German government demands and requirements on data quality from different sources (e.g. ICLD handbook, PAS 2050, ecoinvent,...)
- development of an approach based on shared specifications for diverse LCA applications
 - preservation of the requirements for specific applications

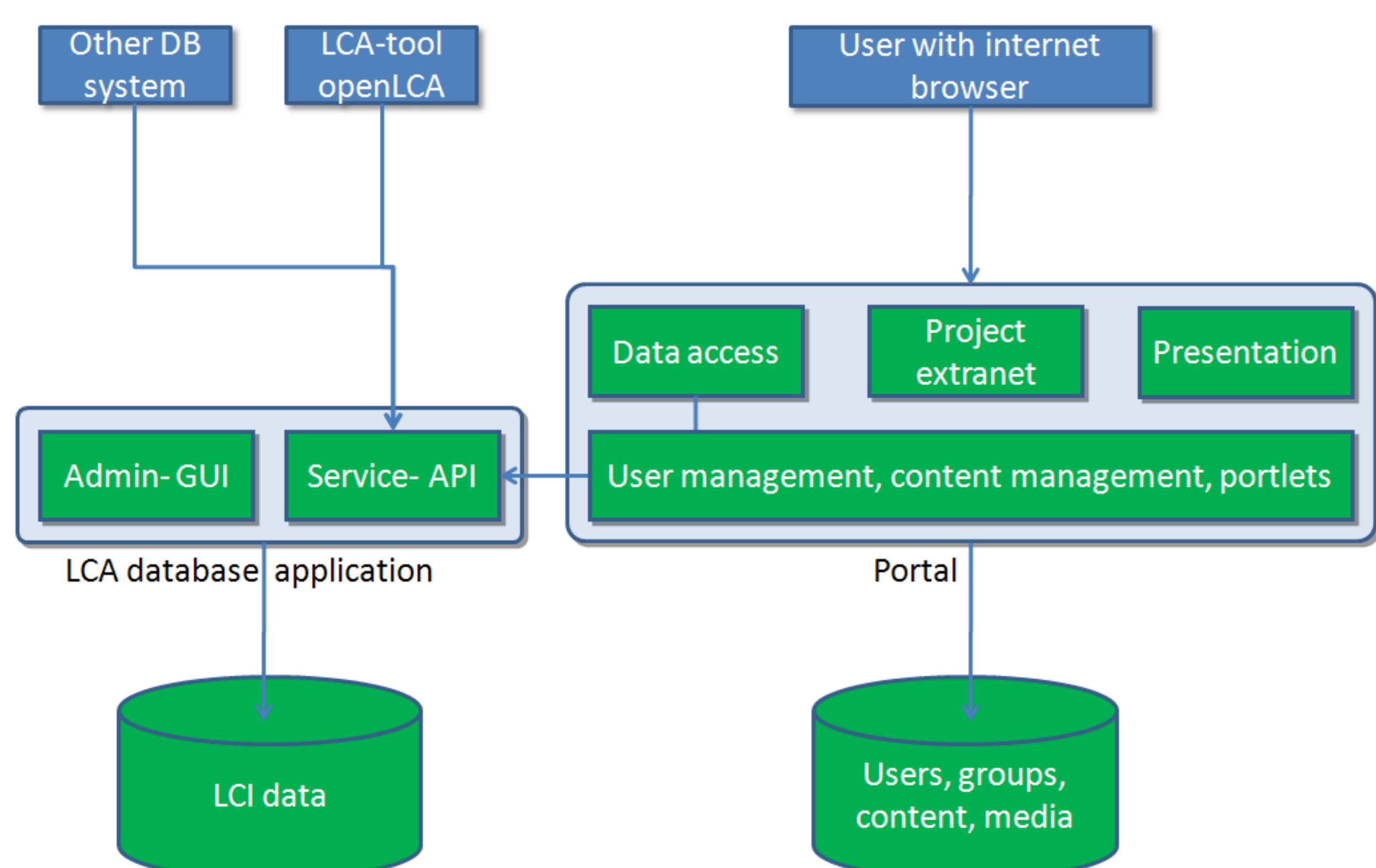


Fig.2: IT-infrastructure

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